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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,836	12/08/2003	Kushagra Vaid	42339-192083	9261

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EXAMINER

MEHRMANESH, ELMIRA

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,836

Applicant(s)

VAID ET AL.

Examiner

Elmira Mehrmanesh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 6 and 8-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 5, 6 and 8-27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to an amendment filed on July 25, 2006 for the application of Vaid et al., for a "Poisoned error signaling for proactive OS recovery" filed December 8, 2003.

Claims 1-3, 5, 6, and 8-27 are pending in the application.

Claims 1, 8, 13-15, 21-22, and 24-26 have been amended.

Claims 4 and 7 have been cancelled.

Claims 1-3, 5, 6, and 8-27 are rejected under 35 USC § 103.

Specification

In response to the typographical error correction in the specification, the applicant's remarks have been fully considered, and the last objections have been withdrawn.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 21-27, the claims are not limited to tangible embodiments. In view of Applicant's disclosure, specification on (page 1, paragraph [0007]), the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., floppy disk, CD) and intangible embodiments (e.g., the use of

intangible media such as signals, carrier waves, transmissions). As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 5, 6, and 8-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meaney et al. (U.S. PGPUB No. 20040139374) in view of Gilbertson et al. (U.S. Patent No. 6,594,785).

As per claim 1, Meaney discloses a method of addressing data errors in a computer system (page 2, paragraph [0015], lines 2-10), comprising: error-checking a unit of data (page 4, paragraph [0041]) and (Fig. 7, element 704).

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if at least one uncorrectable error is detected in the unit of data, and acting, by an operating system of the computer system, upon the presence of the indication to address the presence of erroneous data in the unit of data, wherein the operating system is not always brought down upon the presence of the indication (page 2, paragraph [0019], lines 18-21) and (page 6, paragraph [0055], lines 10-24) and (page 8, paragraph [0071], lines 24-30)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

determining if the at least one uncorrectable error is a data poisoning event and if so, (col. 20, lines 4-11)
marking the unit of data with an indication that the unit of data contains data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)
determining based on a data poisoning policy, if the data poisoning event is to be acted upon (col. 27, lines 58-67) and if so
detecting, by the computer system, the presence of the indication that the unit of data contains a data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)

It would have been obvious to one of ordinary skill in the art at the time the invention to use the method for identifying, managing, and signaling uncorrectable errors of Meaney et al. in combination with the System and method for fault handling and recovery of Gilbertson et al.

One of ordinary skill in the art at the time the invention would have been motivated to make the combination because Meaney et al. discloses a method and system to identify and tag uncorrectable errors (page 3, paragraphs [0023-0025]) in an Symmetric Multiprocessing (SMP) System (Fig. 1). Gilbertson et al. discloses a system and method for performing fault recovery within a Symmetrical Multi-Processor (SMP) system (Fig. 1). Gilbertson et al. uses a poisoning process to indicate the data is poisoned (col. 20, lines 4-11).

As per claim 2, Meaney discloses said error-checking comprises: applying error-control decoding to the unit of data (Fig. 3).

As per claim 3, Meaney discloses said error-checking further comprises: correcting any correctable errors in the unit of data (page 4, paragraph [0041], lines 3-6).

As per claim 5, Meaney discloses said acting upon the presence of the indication comprises: removing the unit of data from use by the operating system (page 4, paragraph [0043]) and (page 6, paragraph [0060], lines 13-15).

As per claim 6, Meaney discloses said acting upon the presence of the indication further comprises: recovering the unit of data (page 4, paragraph [0041], lines 3-6).

As per claim 8, Meaney discloses if the operating system detects the presence of, determining if the unit of data is in user space (page 6, paragraph [0060], lines 9-13) and if the unit of data is in user space, terminating an application running on the computer system and removing the unit of data from use by the operating system (page 6, paragraph [0060], lines 13-15)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

said indication that the unit of data contains data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)

As per claim 9, Meaney discloses upon detection of an uncorrectable error in said unit of data, providing information to said operating system to enable recovery of said unit of data (page 4, paragraph [0043]).

As per claim 10, Meaney discloses the information includes a target address corresponding to said unit of data (page 6, paragraph [0056]) and (Fig. 6A-C).

As per claim 11, Meaney discloses determining whether or not to take immediate action on detection of a data-poisoning error (page 6, paragraph [0055], lines 18-24).

As per claim 12, Meaney discloses said determining whether or not to take immediate action on detection of a data-poisoning error comprises: setting a software-

visible control bit (page 6, paragraph [0055], lines 18-24).

As per claim 13, Meaney discloses said detecting is performed by at least one unit selected from a group consisting of: a processor (Fig. 1, element 100) and a memory (Fig. 1, element 102).

As per claim 14, Meaney discloses a computer system comprising:

at least one processor (Fig. 1, element 100)

at least one of an error control decoding implementation selected from the group consisting of an error-control decoder, software to implement error-control decoding by the at least one processor, and firmware to implement error-control decoding in conjunction with the at least one processor, adapted to process units of data and to determine if a unit of data contains at least one uncorrectable error (page 6, paragraph [0055], lines 15-24) and (page 4, paragraph [0043]).

and to act upon said presence to mitigate the at least one uncorrectable error without always bringing down the operating system upon detection of a unit of data marked as being bad (page 2, paragraph [0019], lines 18-21) and (page 6, paragraph [0055], lines 10-24) and (page 8, paragraph [0071], lines 24-30)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

a module to run on said at least one processor (Fig. 1) to determine if said at least one uncorrectable error is a data poisoning event and (col. 20, lines 4-11), if so, to

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mark as containing a data poisoning event a unit of data containing said at least one uncorrectable error (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015) and at least one operating system to run on said at least one processor (Fig. 1), the operating system to implement a policy to determine if a particular data poisoning event is to be acted upon or not (col. 27, lines 58-67), the operating system adapted to detect the presence of a unit of data marked as containing a data poisoning event, if the data poisoning event is to be acted upon, (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015).

As per claim 15, Meaney discloses a memory coupled to said at least one error control decoding implementation selected from the group consisting of an error-control decoder, software to implement error-control decoding, and firmware to implement error-control decoding, wherein the at least one of error-control decoding implementation is adapted to process units of data stored in the memory (page 6, paragraph [0055], lines 15-24) and (page 4, paragraph [0043]).

As per claim 16, Meaney discloses said memory comprises: a processor cache (Fig. 2, element 204).

As per claim 17, Meaney discloses at least one bus (Fig. 7, element 702) coupled to said at least one of an error-control decoder, software to implement error-control decoding, and firmware to implement error-control decoding, wherein the at least

one of an error-control decoder, software to implement error-control decoding, and firmware to implement error-control decoding is adapted to process units of data passing through the at least one bus (page 6, paragraph [0055], lines 15-24) and (page 4, paragraph [0043]).

As per claim 18, Meaney discloses logic (Fig. 7, element 704) adapted to control signaling of information relating to one or more uncorrectable data errors (Fig. 7, element 708).

As per claim 19, Meaney discloses the logic comprises: programmable logic (page 6, paragraph [0055], lines 15-24).

As per claim 20, Meaney discloses the information includes a target address corresponding to a unit of data containing at least one uncorrectable error (page 6, paragraph [0056]) and (Fig. 6A-C).

As per claim 21, Meaney discloses a machine-accessible medium containing software code that, when read by a computer (page 6, paragraph [0055], lines 15-24) causes the computer to perform a method comprising:

error-checking a unit of data (page 4, paragraph [0041]) and (Fig. 7, element 704).

if at least one uncorrectable error is detected in the unit of data, and acting, by an operating system of the computer, upon the presence of the indication to address the presence of erroneous data in the unit of data, wherein the operating system is not always brought down upon the presence of the indication (page 2, paragraph [0019], lines 18-21) and (page 6, paragraph [0055], lines 10-24) and (page 8, paragraph [0071], lines 24-30)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

determining if the at least one uncorrectable error is a data poisoning event and if so, (col. 20, lines 4-11)
marking the unit of data with an indication that the unit of data contains data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)
determining based on a data poisoning policy, if the data poisoning event is to be acted upon (col. 27, lines 58-67) and if so

detecting, by the computer system, the presence of the indication that the unit of data contains a data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)

As per claim 22, Meaney discloses software code that, when read by a computer, causes the computer to also perform the following: determining if the unit of data is in user space (page 6, paragraph [0060], lines 9-13) and if the unit of data is in user

space, terminating an application running on the computer and removing the unit of data from use by the operating system (page 6, paragraph [0060], lines 13-15)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

if the operating system (Fig. 1) detects the presence of said indication that the unit of data contains a data poisoning event (col. 20, lines 4-11).

As per claim 23, Meaney discloses said acting upon the presence of the indication comprises: removing the unit of data from use by the operating system (page 4, paragraph [0043]) and (page 6, paragraph [0060], lines 13-15).

As per claim 24, Meaney discloses a computer system comprising:

at least one processor (Fig. 1, element 100)

and at least one tangible machine-accessible medium to be coupled to the at least one processor, the at least one processor to access the at least one machine-accessible medium and to execute software code stored on the at least one machine-accessible medium, to cause the computer system (page 6, paragraph [0055], lines 15-24) to perform a method comprising: error-checking a unit of data (page 4, paragraph [0041]) and (Fig. 7, element 704).

detecting the presence of the indication that the unit of data contains erroneous data (page 4, paragraph [0043])

and acting, by an operating system of the computer system, upon the presence of the indication to address the presence of erroneous data in the unit of data, wherein the operating system is not always brought down upon the presence of the indication (page 2, paragraph [0019], lines 18-21) and (page 6, paragraph [0055], lines 10-24) and (page 8, paragraph [0071], lines 24-30)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

determining if the at least one uncorrectable error is a data poisoning event and if so, (col. 20, lines 4-11)
marking the unit of data with an indication that the unit of data contains data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015)
determining based on a data poisoning policy, if the data poisoning event is to be acted upon (col. 27, lines 58-67) and if so
detecting, by the computer system, the presence of the indication that the unit of data contains a data poisoning event (col. 20, lines 5-8) and (Fig. 10, elements 1013, 1015).

As per claim 25, Meaney discloses the at least one machine-accessible medium further comprises software code that when executed by the at least one processor causes the computer system to further performs: determining if the unit of data is in user space (page 6, paragraph [0060], lines 9-13) and if the unit of data is in user space,

terminating an application running on the computer and removing the unit of data from use by the operating system (page 6, paragraph [0060], lines 13-15)

Meaney fails to explicitly disclose poisoning event.

Gilbertson teaches:

if the operating system (Fig. 1) detects the presence of said indication that the unit of data contains a data poisoning event (col. 20, lines 4-11).

As per claim 26, Meaney discloses the at least one machine-accessible medium further comprises software code that when executed by the at least one processor, causes the computer system to further performs: removing the unit of data from use by the operating system (page 4, paragraph [0043]) and (page 6, paragraph [0060], lines 13-15).

As per claim 27, Meaney discloses at least one bus coupling the at least one processor with the at least one machine-accessible medium (Fig. 1, element 100).

Response to Arguments

Applicant's arguments have been fully considered with the examiner's response detailed below.

In response to Applicant's arguments with regards to the rejection of claims 21-27 under 35 U.S.C. 101, Examiner respectfully disagrees and notes that according to the

new Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

Applicant's arguments see pages 15-17, filed July 25, 2006 with respect to the rejection(s) of claim(s) 1-27 under 35 USC § 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Meaney et al. (U.S. PGPUB No. 20040139374) in view of Gilbertson et al. (U.S. Patent No. 6,594,785). Refer to the corresponding section of the claim analysis for details.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmira Mehrmanesh whose telephone number is (571) 272-5531. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W. Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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